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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/358,206	07/21/1999	JOHN B. CARROLL	WAB-97090	1249

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EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/358,206

Applicant(s)

CARROLL, JOHN B.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-7, 9, 11-12, 14-15, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. (U.S. Pat. No. 5, 559, 378) in view of Fiegel et al. (U.S. Pat. No. 5, 826, 952) and further in view of Noltner (DE 2355728A).

Oudet et al. substantially teaches the claimed invention except that it does not show an electric power generator comprising an O-ring in a groove formed on the outer

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surface of the first portion of the piston to prevent loss of air between the piston and the cylinder and permit air pressure in the cylinder to increase when the first portion of the piston is disposed within the cylinder. Oudet et al. do not disclose that an emf is generated in the electric coil, so that an external circuit connected to the electric coil receives electric power from the electric coil. Oudet et al. do not disclose that the inlet flowpath includes an air filter for excluding foreign material from the cylinder. Oudet et al. do not disclose that the inlet flowpath includes a choke to control an impedance of the inlet flowpath.

Oudet et al. do not disclose that the cylinder extension having an inner surface having a transverse dimension greater than a transverse dimension of the cylinder. Oudet et al. do not disclose that at least a portion of the piston extension contacting at least a portion of the cylinder extension to provide positional constraint to the piston. Oudet et al. do not disclose that the portion of the piston extension contacting at least a portion of the cylinder extension is an outer surface of the piston extension and the portion of the cylinder extension is an inner surface of the cylinder extension. Oudet et al. do not disclose that the piston extension has at least one longitudinal air passage to carry air to an end of the piston adjacent the end closure, the exhaust being connected to the end closure. Oudet et al. do not disclose that the exhaust passage includes an electrically actuated shutoff valve to prevent air flow through the generator, thereby turning off the generator.

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Fiegel et al. disclose sealing means disposed on at least one of an outer surface of the first portion of the piston (22) and an inner surface of the cylinder to prevent loss of fluid between the piston (22) and the cylinder and permit fluid pressure in the cylinder to increase when the first portion of the piston (22) is disposed within the cylinder.

Fiegel et al. disclose that the sealing means is an O-ring in a groove formed on the outer surface of the first portion of the piston (22). Fiegel et al. disclose that the inlet flowpath includes a fluid filter (62) for excluding foreign material from the cylinder. Fiegel et al. disclose that the cylinder extension having an inner surface having a transverse dimension greater than a transverse dimension of the cylinder.

Fiegel et al. disclose that at least a portion of the piston extension (37 in figure 3) contacting at least a portion of the cylinder extension to provide positional constraint to the piston (22). Fiegel et al. disclose that the portion of the piston extension (63 in figure 4) contacting at least a portion of the cylinder extension is an outer surface of the piston extension (63) and the portion of the cylinder extension is an inner surface of the cylinder extension. Fiegel et al. disclose that the piston extension (37) has at least one longitudinal fluid passage (65) to carry fluid to an end of the piston (22) adjacent the end closure (32,35), the exhaust (35) being connected to the end closure (32). Fiegel et al. disclose that the passage (65) includes an electrically actuated shutoff valve (46-49) to prevent fluid flow through the actuator, thereby turning off the actuator. The invention of Fiegel et al. has the purpose of increasing efficiency and reducing the dimensions and weight of the embodiment.

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Noltner disclose an electric power generator whereby an emf is generated in the electric coil (5), so that an external circuit connected to the electric coil (5) receives electric power from the electric coil (5). Noltner disclose that the inlet flowpath includes a choke (10,11) to control an impedance of the inlet flowpath. Noltner's invention has the purpose of showing that the electromagnetic piston-cylinder configuration can be applied in pumps, compressors, and generators which can be either hydraulically, pneumatically or thermally actuated.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al. and provide it with the sealing means, filter, cylinder and piston configurations, longitudinal fluid passage, electrically actuated shutoff valves, and operate the embodiment as a generator as disclosed by Fiegel et al. and Noltner for the purpose of increasing efficiency and reducing the dimensions and weight of the embodiment and provide the specified electric power source configuration.

2. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. in view of Fiegel et al. and further in view of Noltner as applied to claim 7 above, and further in view of Higham et al. (U. S. Pat. 5,146,124).

Oudet et al., Fiegel et al. and Noltner substantially teaches the claimed invention except that it does not show that at least one of the outer surface of the piston extension and the inner surface of the cylinder extension is at least one of made from and coated with a low friction material.

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Higham et al. disclose that at least one of the outer surface of the piston extension (10) and the inner surface of the cylinder extension (560) is at least one of made from and coated with a low friction material (532). The invention of Higham et al. has the purpose of reducing wear and friction of the contacting surfaces.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al., Fiegel et al. and Noltner and provide it with the low friction material disclosed by Higham et al. for the purpose of reducing wear and friction of the contacting surfaces.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. in view of Fiegel et al. and further in view of Noltner as applied to claim 9 above, and further in view of Meyer (U. S. Pat. 4,352,645).

Oudet et al., Fiegel et al. and Noltner substantially teaches the claimed invention except that it does not show that the at least one longitudinal air passage is a longitudinal slot formed in the outer surface of the piston extension.

Meyer discloses that the at least one longitudinal fluid passage (31) is a longitudinal slot formed in the outer surface of the piston extension (19). Meyer's invention has the purpose of providing a fluid discharge between two chambers of the embodiment.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al., Fiegel et al. and Noltner and provide it with the longitudinal

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slot disclosed by Meyer for the purpose of providing a fluid discharge between two chambers of the embodiment.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. in view of Fiegel et al. and further in view of Noltner as applied to claim 5 above, and further in view of Park (U. S. Pat. 5,451,727).

Oudet et al., Fiegel et al. and Noltner substantially teaches the claimed invention except that it does not show that the exhaust passage includes a muffler to reduce noise released from the generator.

Park discloses that the exhaust passage includes a muffler (31) to reduce noise released from the actuator. Park's invention has the purpose of diminishing noise and heat transfer thus improving the performance of the embodiment.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al., Fiegel et al. and Noltner and provide it with the muffler disclosed by Park for the purpose of diminishing noise and heat transfer thus improving the performance of the embodiment.

5. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. in view of Fiegel et al. and further in view of Noltner as applied to claim 1 above, and further in view of Konotchick (U. S. Pat. 5,347,186).

Oudet et al., Fiegel et al. and Noltner substantially teaches the claimed invention except that it does not show that the at least one electric coil is connected to a rectifier to supply DC electric power. Neither Oudet et al., Fiegel et al. nor Noltner disclose that

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the rectifier is a full bridge rectifier to supply DC electric power whenever a net flux through the at least one electric coil is changing.

Konotchick discloses that the at least one electric coil (70-73) is connected to a rectifier (figure 5b) to supply DC electric power. Konotchick discloses that the rectifier is a full bridge rectifier to supply DC electric power whenever a net flux through the at least one electric coil is changing. Konotchick's invention has the purpose of providing electrical regulation and the capability to handle small power surges.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al., Fiegel et al. and Noltner and provide it with the rectifier disclosed by Konotchick for the purpose of providing electrical regulation and the capability to handle small power surges.

6. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. in view of Noltner.

Oudet et al. substantially teaches the claimed invention except that it does not show an electric power generator whereby an emf is generated in the electric coil, so that an external circuit connected to the electric coil receives electric power from the electric coil.

Noltner disclose an electric power generator whereby an emf is generated in the electric coil, so that an external circuit connected to the electric coil receives electric power from the electric coil. Noltner's invention has the purpose of showing that the

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electromagnetic piston-cylinder configuration can be applied in pumps, compressors, and generators which can be either hydraulically, pneumatically or thermally actuated.

It would have been obvious at the time the invention was made to modify the embodiment of Oudet et al., and Noltner and provide it with the capability of operating the embodiment as a generator as disclosed by Noltner for the purpose of providing the electromagnetic piston-cylinder configuration application in generators which can be either hydraulically, pneumatically or thermally actuated.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Guillermo Perez
May 1, 2002



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